Nassau Count Storm Water Pollution Prevention and IPM Plan Development

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Cooperators:
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Abstract:
As required by the Clean Water Act, The United States Environmental Protection Agency (EPA) published regulations addressing storm water discharges, and specifically, discharges to municipal separate storm sewer systems (MS4s) operated by cities and counties. Storm water runoff from land can adversely affect aquatic environments and water quality by introducing sediments, contaminants, floatables (trash), nutrients that lead to oxygen depletion, and harmful microorganisms. Municipalities that operate MS4s are required to develop storm water management plans that set attainable and measurable goals for reducing runoff and contamination of surface waters, by reducing the chances of runoff and the potential for contamination of runoff.

The Department of Public Works of Nassau County, NY, awarded a project to the engineering firm Dvirka and Bartilucci, of Woodbury, NY, to develop part of the County's Storm Water Phase II Pollution Prevention Plan. Dvirka and Bartilucci, in turn, contracted with Cornell Cooperative Extension (NYS IPM Program) to develop a section of this plan, titled "Minimum Measure Six: Pollution Prevention/Good Housekeeping for Municipal Operations". Specifically, NYS IPM was contracted to develop the part of the plan that evaluated and made recommendations about pest management practices and pesticide and fertilizer use in county facilities. Through on-site evaluations, staff interviews, and by reviewing pesticide use records and storage and handling procedures, NYS IPM developed a pesticide runoff risk-reduction plan that incorporated the activities of the Department of Parks and Recreation. This plan also included IPM recommendations for the vector and rodent control programs, and other indoor facilities where pest control efforts generally do not lead to runoff contamination.

Background and justification:
Summarize pertinent IPM efforts, the need, and producer interest. Tell how the project addresses commodity priorities and how it might address water quality or the FQPA.

Nassau County is a heavily populated suburb directly adjacent to the boroughs of New York City. The diverse population includes some of the poorest and the wealthiest communities in New York State. In 1995 the County Executive mandated that "the use of formulated organic chemical pest controls shall cease" and that contracts for pest control be re-drafted to specify the use of IPM. Other sections of this mandate included the development of guidelines, methods to evaluate compliance, and the establishment of a Pesticide Advisory Committee (PAC), among other things. With the outbreak of West Nile Virus in 1999, Nassau County's PAC found itself at the heart of the debate over

municipal pesticide use. By 2000 Nassau County was close to bankruptcy with budget problems and the administration was overhauled by 2001. Services, agencies and departments were trimmed as thin as possible, leaving skeleton operating budgets for departments like Parks and Recreation. Consequently, budgets for facility maintenance were minimal. Departments such as Parks and Recreation, and Public Works no longer used expensive pesticides for weed management in parks and along highways. Golf course management supplies were also cut back, but not eliminated. Pesticide uses were reduced to a bare minimum, however not because of the adoption of IPM. There was no budget to buy pesticides.

Although Nassau County has recovered from its budget woes, several departments have continued a non-pesticide pest management strategy. The County's seven golf courses are the primary locations where pesticide and fertilizer products are applied to outdoor areas. The Department of Health oversees the county's vector control program, which uses pesticides as well. Despite changes, budget problems, and emerging issues, such as West Nile Virus, Nassau County has managed to adhere to a basic IPM approach in situations where pest management is necessary. However, the County, and particularly the golf courses, was in need of changes that could mitigate polluted runoff.

The objectives of this project are as follows:

a) Assess pest problems, pest management practices, pesticide and fertilizer use, and handling/storage for Nassau County Department of Parks and Recreation.
b) Make recommendations for an integrated pest management (IPM) program to improve pest management practices and reduce pollution risks from pesticide and fertilizer use, and handling/storage for Nassau County Parks and Recreation.
c) Evaluate the Nassau Count Department of Health Mosquito Control Program and make recommendations to improve IPM practices and reduce pollution risk.
d) Review rodent management practices in Nassau County and make recommendations for improvement of management strategies.
e) Assess the use of herbicides along rights-of-way (highways, electrical lines, other facilities) and make IPM recommendations for more judicious use as well as alternatives.
f) Assess structural pest management practices and make recommendations to improve IPM practices for indoor pest management.

Procedures:

During the course of this evaluation, I spent most of the time learning about practices and challenges in the Department of Parks and Recreation. Many days were spent meeting with facilities managers, golf course superintendents and staff, and driving around the county to visit parks and golf courses. I evaluated sites based on their use and pest problems, and took photos and notes on storm water pollution risks that I witnessed to be incorporated into the storm water pollution prevention plan and recommendations.

County parks and golf courses are a source of revenue for the county and several are very well maintained. A semi-professional athletic facility and three of the seven golf courses are managed at a professional level with priority placed on the quality of turfgrass.

Tournaments are often played at these facilities. Despite the unlimited, yet judicial, use of pest management products, a handful of pest problems were still evident at the high-end facilities. The remaining parks, athletic fields, and golf courses are not maintained at such a high level, but still garner a share of pesticide and fertilizer use. Many significant runoff pollution risks were found at the facilities where pesticides and fertilizers were used. Recommendations were strongly made in the plan to prioritize challenges and make appropriate changes. The storage of products is centralized in a new building and was deemed appropriate, however mixing, loading and handling of pesticides and fertilizers presented unnecessary risks.

Many pesticide and non-chemical recommendations were made for all parks and golf facilities to reduce the likelihood of storm water runoff and the types of contaminants contained within runoff. The report suggested replacement of higher toxicity pesticides with low-risk, effective alternatives. Slow-release fertilizers were recommended and it was advised that no pesticide or fertilizer applications be made when more than _ inch of rain was forecasted in the following 24 - 48 hours. Alteration and additions of plantings were proposed to capture runoff at several golf courses and parks. The renovation of storm drains at two golf courses was also highlighted as a priority.

The Mosquito Control Program of Nassau County issues an annual report on its activities. I reviewed reports from the past three years and found that the mosquito management program is an excellent example of IPM implementation. Due to the introduction of West Nile Virus in New York in 1999, the Mosquito Control Program has been under scrutiny for its decision making and pesticide use, particularly spraying for adult mosquitoes. The program has worked diligently to develop an optimized and comprehensive surveillance program for disease carrying mosquitoes. As a result, Nassau County has not needed to use adulticides sprays since 2001. The program relies mainly on surveillance and the use of microbial products for larval mosquito control.

The Department of Health manages a community rodent program that is complain-based. The county takes calls from county residents about rodents, and then sends a contracted pest control company to place bait stations in the area of the complaint. The Department of Health also keeps track of complaints. I recommended ways to improve community rodent management that included some outreach to community residents and businesses about rodent-proofing and sanitation and the development of a rodent task force, if the problem increases in the future.

As a result of budget cuts the use of herbicides along rights-of-way (highways, electrical lines, other facilities) is virtually non-existent. Mowing is the standard practice for weed management. Many highways and roads receive no vegetation management at all. I recommended that the county look into ways to plant undesirable weedy areas with preferred low-maintenance ground covers.

I interviewed the owner and a technician of the one county-contracted pest control service employed by Nassau County. This company has a strong reputation for doing IPM. Focusing on what the county can do, I made recommendations to improve IPM that

included adopting a log book record-keeping system. This would enhance the pest control contractor's precision in addressing pest problems. I also made recommendations for reviving the Pesticide Advisory Committee, facilitating the contractor's job, increasing scheduled site inspections to at least once a year, and training employees and administrators about IPM awareness.

Results and discussion:
The resulting report on IPM implementation for Nassau County's storm water pollution prevention plan was 46 pages long, not counting appendices and reference materials. The report included details and photographs of site visits, a customized IPM plan for the management of annual bluegrass weevils at Eisenhower Park golf courses, and many other specific recommendations.

This project was wide in its scope, encompassing outdoor pesticide and fertilizer use, vector and rodent control, and indoor pest management. The report and recommendations for Nassau County focus on improving current practices and adopting IPM strategies where they are not being used. Nassau County commissioned the EPA-mandated storm water pollution prevention plan as a requirement of the Clean Water Act, however it remains to be seen whether recommendations in this report can feasibly be adopted. Despite this uncertainty, it is anticipated that positive impacts will be seen from the interaction of county workers with NYS IPM, because these county workers now understand that there are scientists within their reach whom they can call upon for advice and help in the adoption of IPM and finding solutions and alternatives.

Project location:
Nassau County, NY.

Resources developed:
If the Storm Water Pollution Prevention Plan is published on the Nassau County DPW website (at the discretion of Nassau County), other municipalities will have access to the information and recommendations provided.